

### **Outfall 002A – TCE Exceedance in April 2017 and Plan of Action**

The TCE concentration in the sample from outfall 002A (groundwater infiltration) was 15 ppb this month, compared to a permit limit of 5 ppb.

We believe this exceedance was due to the following:

- Full capture of dry weather flow was not being achieved at the time of sample collection at a recovery flow rate of 30 gallons per minute (gpm).
  - Note: The dry weather flow at the time of sample collection also exceeded the maximum design capacity (50 gpm) of the dry weather capture system due to the seasonally high groundwater table resulting in abnormally high rates of groundwater infiltration into the storm sewer system

The reasons for this conclusion are as follows:

1. Flow was observed going over the baffle and the overflow switch, installed at the top of the baffle, was engaged.
2. The estimated flow going over the baffle at the time of sample collection was 40 gpm. This flow was determined by taking the difference of the measured flow at 002A (167 gpm) at the time of sample collection (4/19 at 8:36 AM) and subtracting the average effluent (002B) flow (127 gpm) during that time frame (between 8:30 AM and 8:50 AM).
3. Combining the flow going over the baffle, 40 gpm, with the confirmed dry weather recovery flow rate of 30 gpm yields a total dry weather flow at the time of sample collection of approximately 70 gpm.

The following corrective actions have recently been performed and/or are planned:

1. The system is operating near capacity due to the increased overburden recovery rate and constant operation of the dry weather flow catchment system (i.e. sustained dry weather flow above recovery capacity). In order to allow for the dry weather catchment system recovery flow rate to be increased, without having to reduce overburden recovery, the bedrock well pump has been temporarily shut off. The dry weather catchment system is currently recovering approximately 45 gpm and will be maintained at a flow rate between 40 and 50 gpm until dry weather flow is fully captured.
  - a. Note: Operating the dry weather flow capture system at a flow rate greater than 40 gpm greatly increases the risk of total system shutdown due to fouling from organics (leaves, twigs, etc.) and bacterial iron sludge. For this reason our corrective action in February, and the additional corrective actions planned for May, focused on reducing the amount of overburden groundwater that infiltrated into the storm sewer, in lieu of increasing the recovery rate of the dry weather catchment system, as a means of working towards a long-term solution for this recurring problem during high groundwater conditions.
2. In March 2017 preliminary efforts were made to attempt to seal two open bottom catch basins (CB-74 and CB-73) as an immediate corrective action effort to reduce the amount of dry

weather flow entering into the storm sewer system during these seasonally high water table conditions. As of 3/17/17, the interiors of both CB-73 and 74 had been power-washed, mortar applied to the interior to seal the seams at the inverts and in between the blocks, and concrete bottoms poured to create a near water-tight seal. Given that seasonally high groundwater levels are still present at the site the effectiveness of these seals remains unclear. In the upcoming months, CB-73 and CB-74 will be further evaluated and, if necessary, supplemental sealing efforts will be made.

3. We are continuing to increase the recovery capacity of the overburden system and have been operating a second transfer pump to work in tandem with the existing transfer pump for approximately 3 months with positive results (as of 5/10/17, the overburden system is now recovering between 60 and 70 gpm). This is being done in an effort to reduce the amount of overburden infiltration into the storm sewer which will thus reduce the dry weather flow and, under normal conditions, allow dry conditions on the downstream side of the baffle to be maintained at the design maximum vault recovery rate. Continued balancing efforts of the overburden capture system will be performed in order to increase capture at the points closest to the storm sewer network.